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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/536,774

05/26/2005

Tatsuru Shirafuji

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EXAMINER

FORD, KENISHA V

ART UNIT

PAPER NUMBER

2812

MAIL DATE

DELIVERY MODE

11/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,774	Applicant(s) SHIRAFUJI ET AL.	
	Examiner KENISHA V. FORD	Art Unit 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-12 is/are allowed.
- 6) ☒ Claim(s) 1-4,7,8,13-16 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 5 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 26 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Amendment filed on 11 July 2008. Currently, claims 1-20 are pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, 13-16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirafuji et al. (“Plasma Copolymerization of C₆F₆/C₅F₈ for Application of Low-Dielectric-Constant Fluorinated Amorphous Carbon Films and Its Gas-Phase Diagnostics Using *In Situ* Fourier Transform Infrared Spectroscopy”).

Regarding claims **1 and 13**, Shirafuji et al. discloses a method for manufacturing a fluorocarbon film wherein a specific inductive capacity is within a range of 2 or less (p. 2697, para. 1, lines 4-7) comprising introducing a mixed gas comprising a first carbon fluoride gas and a second carbon fluoride gas on a substrate placed inside a chamber, and depositing a fluorocarbon film on said substrate; forming voids in said fluorocarbon film by selectively removing volatile components contained in said fluorocarbon film (p.2697, para. 2, lines 1-15).

Regarding claims **2 and 14**, Shirafuji et al. discloses a method for manufacturing a fluorocarbon film wherein a specific inductive capacity is within a range of 2 or less (p. 2697, para. 1, lines 4-7) comprising introducing a mixed gas comprising a first carbon fluoride gas and a second carbon fluoride gas on a substrate placed inside a chamber, depositing a fluorocarbon film on said

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substrate; forming voids in said fluorocarbon film by selectively removing volatile components contained in said fluorocarbon film; wherein said first carbon fluoride-containing compound having 4 to 5 carbon atoms; and said second carbon fluoride gas is a fluorine-containing compound having 6 to 12 carbon atoms (p.2697, para. 2, lines 1-15).

Regarding claims **3 and 15**, Shirafuji et al. discloses a method for manufacturing a fluorocarbon film wherein said first carbon fluoride gas is octafluorocyclopentene (p. 2697, para. 2, lines 9-10).

Regarding claims **4 and 16**, Shirafuji et al. discloses a method for manufacturing a fluorocarbon film wherein said second carbon fluoride gas is hexafluorobenzene (p. 2697, para. 2, lines 9-11).

Regarding claims **6 and 18**, Shirafuji et al. discloses a method of manufacturing a fluorocarbon film wherein said step for forming voids includes a step for heating said fluorocarbon film (p. 2698, para. 4, lines 1-7).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims **8** and **20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirafuji et al. as applied to claims 1-4, 6, 13-16 and 18 above, and further in view of Kobayashi et al. (US 2006/0264059 A1).

Based on the definition of high and low volatility given in the specification (pg. 5, para. 98), Kobayashi et al. discloses a method wherein the first carbon fluoride gas is octafluorocyclopentene and of high volatility and the second carbon fluoride gas is hexafluorobenzene and of low volatility (pg. 5, para. 98).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kobayashi et al. with those of Shirafuji et al. to manufacture a fluorocarbon film created by combining two carbon fluoride gases in order to enhance the thermal stability of the film (pg. 4, para. 53, lines 17-22).

6. Claims **7** and **19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirafuji et al. as applied to claims 1-4, 6, 13-16 and 18 above, and further in view of Tsai et al. (US 2004/00161946 A1).

Tsai et al. discloses a plasma chamber that has at least one plasma source that is used to generate plasma energy (pg. 3, para. 29-31).

Therefore, it would have been obvious at the time the invention was made to combine the teachings of Tsai et al. with the method of Shirafuji et al. in order to generate plasma inside the

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chamber so that the entire process can be performed in the reaction chamber in order to control the pressure (pg. 3, para. 28, lines 1-3).

Allowable Subject Matter

7. Claims **5 and 17** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments, see *Remarks p. 1*, filed 7/11/08, with respect to the rejection(s) of claim(s) 1-20 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Shirafuji et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENISHA V. FORD whose telephone number is (571)270-3328. The examiner can normally be reached on Monday-Thursday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on (571) 272-2194. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KVF

/Charles D. Garber/

Supervisory Patent Examiner, Art Unit 2812